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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,223	08/31/2006	Roger John Leach	COLGRA P68AUS	7816
20210 7590 12/30/2008 DAVIS & BUJOLD, P.L.L.C. 112 PLEASANT STREET CONCORD, NH 03301				
EXAMINER				
KHATRI, PRASHANT J				
ART UNIT		PAPER NUMBER		
1794				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/591,223

**Applicant(s)**

LEACH, ROGER JOHN

**Examiner**

PRASHANT J. KHATRI

**Art Unit**

1794

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 27-38 and 40-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27-38 and 40-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

In response to Amendments/Arguments filed 9/11/2008. Claims 27-38 and 40-48 are pending. Claims 25-26 and 39 were cancelled. Claims 28-29, 31, 33-38, and 40-44 were amended. Claims 45-48 were added as new.

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 27-31, 37, and 45-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sopko et al. (***US 4022601***) in view of Hashizume (***US 20010031817***) and Gerhardinger et al. (***US 5714199***).
3. Sopko discloses a method and apparatus for coating a glass substrate. Prior art discloses the method of depositing a vaporized pyrolyzable organometallic salt material onto a substrate (***col. 4 bridged to 5, lines 66+***). As shown in Figure 1, the glass material is heated on the other side of the vaporization nozzles. The purpose of the heating means is to prevent glass warpage (***col. 9 bridged to 10, lines 66+***). Examiner takes the position that heating the substrate from the opposite side of the vaporization nozzles would also result in an even coating of the deposited material due to the reduction of warpage thereby reducing the defects within the coating (i.e. uneven coating of material). Prior art discloses the heating means may be infrared lamps or infrared reflectance heaters and multiple heaters may be used (***col. 10, lines 1+***). Given that the prior art discloses the above, Examiner takes the position that the use of

infrared heating from the bottom would result in the same effect as that presently claimed. Furthermore, it is well-known that the basic thermodynamic laws of heat convection establish that heat rises. Given that there are several different configurations given by the prior art, Examiner takes the position that in this case, the application of the infrared heaters underneath the glass substrate would establish a two-fold purpose: first, a method for preventing warpage of the glass substrate and second a means for uniformly coating the substrate due to the heat rising from the bottom surface. Regarding claim 46, it is noted that the glass ribbon is heated prior to the coating step (**col. 7, lines 50+**). Given that the present claims only require a preheating, Examiner takes the position that the glass ribbon is in fact preheated prior to the deposition of the coating and further as shown by prior art, the deposition takes place with infrared heaters placed below the second surface of the glass ribbon. Given that the Regarding claims 30 and 31, Examiner considers the infrared reflectance heaters to function by reflecting radiation off of the inner walls to focus the heat onto a surface. However, prior art is silent to the presently claimed thermosetting powder and adhesion promoting materials.

4. Hashizume discloses a powder coating composition comprising metallic flakes mixed with a thermosetting resin. Prior art discloses the thermosetting resin as acrylic resins, polyester resins, polyurethane resins, and epoxy resins (**para. 0011**). It is noted that the reason thermosetting resins are used as opposed to the previous metallic substances in organic solvents is that it is a low pollution coating (**para. 0002**). While Examiner acknowledges that Sopko discloses a vaporized pyrolyzable organometallic

material, one of ordinary skill in the art, due to environmental considerations would have known to modify the process by involving the present composition. Examiner notes that although the disclosure is drawn towards metallic substrates, given the thermosetting resins disclosed are the same as that used in the present invention, one of ordinary skill in the art would have known that the above materials are capable of the same purpose on glass substrates. Furthermore, the presently claimed second thermosetting powder layer would have been obvious to one of ordinary skill in the art to yield a plurality of different colored layers for aesthetic purposes.

5. Gerhardinger et al. disclose the use of a silane may be included within the powder (**col. 5, lines 19+**) or sprayed on prior to the application of the pre-polymer powder (**col. 9, lines 29+**). Examiner takes the position that silanes are well-known as adhesion promoters and used to enhance bonding between dissimilar surfaces and materials. Further, the resultant material would not delaminate or "chip" from the surface of the substrate.

6. Note that while Hashizume and Gerhardinger et al. do not disclose all the features of the present claimed invention, Hashizume and Gerhardinger et al. are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach a certain concept, namely, thermosetting powder material and adhesion promoters in order to reduce environmental impact and enhance bonding between dissimilar surfaces and materials

and in combination with the primary reference, discloses the presently claimed invention.

7. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Sopko discloses a method and apparatus for coating a glass substrate. However, prior art is silent to the presently claimed thermosetting powder and adhesion promoting materials. Hashizume discloses a powder coating composition comprising metallic flakes mixed with a thermosetting resin. The motivation to combine the above references is drawn towards thermosetting resins as opposed to the previous metallic substances in organic solvents are low pollution coating materials, which is more environmentally-friendly and silane materials as disclosed by Gerhardinger are well-known as providing enhanced bonding between dissimilar surfaces and materials. The Courts have made clear that the teaching, suggestion, or motivation test is flexible and an explicit suggestion to combine the prior art is not necessary. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. *Id. at 1366, 80 USPQ2d at 1649*. "[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the improvement is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient. Because the desire to enhance commercial opportunities by improving a product or process is universal-and even common-sensical-we have held that there exists in these

situations a motivation to combine prior art references even absent any hint of suggestion in the references themselves. In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him capable of combining the prior art references." *Id. at 1368, 80 USPQ2d at 1651. See MPEP 2143 (G).*

8. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sopko et al. (**US 4022601**) in view of Hashizume (**US 20010031817**) and Gerhardinger et al. (**US 5714199**) as applied to claim 29 above, and further in view of Horinka et al. (**article**).

9. Prior art discloses the above in paragraphs 3-7. However, prior art is silent to the varying frequency.

10. Horinka discusses the relationship between frequency, wavelength, and energy level for infrared curing process of powder coatings. It is noted that wavelength is inversely proportional to frequency; therefore, at longer wavelengths, the frequency would be lower and at shorter wavelengths, the frequency would be higher. Furthermore, as disclosed by prior art low energy is equivalent to low temperatures and high energy to high temperatures (**p. 1**). Prior art additionally discloses that some systems may have controls whereby the voltage may be adjusted (**p. 2**). Examiner takes the position that controlling voltage would thereby control the energy disposed.

11. Note that while Horinka does not disclose all the features of the present claimed invention, Horinka is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413,

208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, the effect of frequency on infrared energy in order to show that frequency may be controlled by increasing or decreasing voltage and in combination with the primary reference, discloses the presently claimed invention.

12. Horinka is drawn to discussing the various factors associated with infrared curing during a powder coating process. Varying the frequency, or energy would be obvious to one with ordinary skill in the art as it is recognized that at higher energies, the material would melt faster and for an even coating that does not degrade, a control would be added to the system.

13. Claims 33-36, 38, 40-44, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sopko et al. (**US 4022601**) in view of Hashizume (**US 20010031817**) and Gerhardinger et al. (**US 5714199**) as applied to claim 45 above, and further in view of Boucher et al. (**US 3549466**) and Storrs (**US 1988964**).

14. Prior art discloses the above in paragraphs 3-7. However, prior art is silent to a metal foil on the edges.

15. Boucher et al. disclose the use of metal foil edge seals on a transparent assembly (**col. 2, lines 67+**). Prior art discloses the metal foil allows for protection against harmful gases within the atmosphere (**col. 1, lines 55+**) and the ingress of moisture in an "air gap" type of panel (**col. 3, lines 45+**). The thickness the foil is from 0.003 inch and 0.010 inch (**col. 2, lines 68+**), which when converted is 76 microns to 254 microns. However prior art is silent to inward extension of the metal foil.



16. Storrs discloses a metal edge strip as holding means that forms inward extensions (**FIGS. 2-6**). Prior art discloses the holding means prevent dust or dirt from entering an air gap in a double pane installation, which results in a high thermal insulation (**p. 3; 1st col. bridged to 2, lines 48+**). Regarding the inward extension length, Examiner takes the position that the length is an optimizable feature that one of ordinary skill in the art would know to vary depending on the size of the glazing, while maintaining the thermal insulation characteristics of the prior art disclosure. While it is noted that the material disclosed by prior art is not explicitly a foil, as shown by prior art, the edge sealing features allow for protection against moisture, gases, dirt, and the like. Further, given that the resultant structure would be the same as presently claimed, Examiner takes the position that the resultant structure would inherently reduce thermal stresses in dual pane installations.

17. Note that while Boucher et al. and Storrs do not disclose all the features of the present claimed invention, Boucher et al. and Storrs are used as teaching references, and therefore, it is not necessary for these secondary references to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather these references teach a certain concept, namely, metal foil and an inward extension in order to yield an edge seal feature that is capable of providing dual pane glazings protection from moisture, dust, and dirt and in combination with the primary reference, discloses the presently claimed invention.

18. All of the elements were known within the art. The only difference is a single disclosure containing all of the presently claimed elements. Boucher et al. disclose the use of metal foil edge seals on a transparent assembly. However prior art is silent to inward extension of the metal foil. Storrs discloses a metal edge strip as holding means that forms inward extensions. The motivation to combine the above references is drawn towards the metal foil used for protection against harmful gases within the atmosphere and ingress of moisture. Further, it is noted that the inward extension as shown by Storrs allow for protection against moisture, gases, dirt, and the like. Therefore, it would have been obvious to one of ordinary skill in the art to apply a metal foil with the inward extension of the foil edges for protection of a dual pane installation.

#### ***Response to Arguments***

19. Applicant's arguments, see p. 6 regarding the 112 rejection, filed 9/11/2008, with respect to claims 31, 34, 41, and 43 have been fully considered and are persuasive. The rejection of the above claims has been withdrawn.

20. Applicant's arguments, see p. 6 regarding the Gerhardinger reference, filed 9/11/2008, with respect to claims 25-28 and 39 have been fully considered and are persuasive. The rejection of the above claims has been withdrawn.

Applicant's arguments, see p. 6-7 regarding the Gerhardinger in view of Sopko and Horinka rejection, filed 9/11/2008, with respect to claims 25-31 and 39 have been fully considered and are persuasive. The rejection of the above has been withdrawn. However, under further reconsideration, Examiner determined that the references still

may be used as obviousness-type references. Applicant argues that Sopko does not teach the "heat applied to the opposite side". However, a person of ordinary skill in the art would infer that a coating a warped substrate would result in a coating that is non-uniform, which allow for stress concentrations to form. Further, a person of ordinary skill in the art can thusly infer that the heating means underneath a substrate would result in heat convection of the substrate. Heat convection, namely free heat convection allows for heat to rise thereby producing both the desired coating characteristics and further providing a substrate that is not warped. Regarding the Horinka reference, one of ordinary skill in the art would have been able to determine that given a variable frequency knob, one could adjust cure rates and thereby control the curing procedure. The Courts have made clear that the teaching, suggestion, or motivation test is flexible and an explicit suggestion to combine the prior art is not necessary. The motivation to combine may be implicit and may be found in the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. *Id. at 1366, 80 USPQ2d at 1649*. "[A]n implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the improvement is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient. Because the desire to enhance commercial opportunities by improving a product or process is universal-and even common-sensical-we have held that there exists in these situations a motivation to combine prior art references even absent any hint of

suggestion in the references themselves. In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him capable of combining the prior art references.” *Id. at 1368, 80 USPQ2d at 1651. See MPEP 2143 (G).*

21. Applicant’s arguments, see p. 7-12 regarding Leach, Bowser, and Weinlader references, filed 9/11/2008, with respect to the rejected claims have been fully considered and are persuasive. The rejection has been withdrawn.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRASHANT J. KHATRI whose telephone number is (571)270-3470. The examiner can normally be reached on M-F 8:00 A.M.-5:00 P.M. (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Callie Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PRASHANT J KHATRI  
Examiner  
Art Unit 1794

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794